

# Screening for bacteriuria in pregnant women: Benefit unclear

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Due to a lack of suitable studies, no conclusions can be drawn on the patient-relevant benefit or harm of screening for asymptomatic bacteriuria (ASB) in pregnant women. The benefit of antibiotic treatment of ASB following screening is also an open issue, as the results of the over 40-year-old studies cannot be applied to the current healthcare situation. This is the result of the final report published by the German Institute for Quality and Efficiency in Health Care (IQWiG) on 23 April 2015, which was commissioned by the Federal Joint Committee (G-BA).

## Maternity guidelines specify routine screening for ASB

In ASB, the bacteria in the urine do not cause symptoms of a [urinary tract infection](#); ASB can thus be detected only by tests. The midstream urine of pregnant women is usually tested. According to old studies, untreated ASB leads to a kidney infection (pyelonephritis) in about a quarter of cases. A link may also exist between bacteriuria and an increased risk of preterm birth.

To evaluate the benefit of screening for ASB for the mother and the child, it would seem reasonable to compare this strategy with a management strategy without screening. In Germany, like in many other countries, screening for ASB has been a fixed component of antenatal screening for many years due to its alleged benefit. This is why no such

comparative study could be identified. Alternatively, the Institute investigated the benefit and harm of treatment of ASB detected by screening compared with non-treatment or placebo. If the benefit of such treatment in affected women were proven, at least the basic precondition for a benefit of screening would be fulfilled.

## **Healthcare situation has changed**

Three studies on this question published between 1960 and 1969 were identified. The most important patient-relevant outcomes were neonatal morbidity, pyelonephritis, and lower [urinary tract](#) infection. For the two latter outcomes, in each case a hint of an effect of antibiotic treatment was found.

But these over 40-year-old study results are not applicable to the current healthcare situation. In part, before the study the participants were subjected to measures that are no longer common in healthy pregnant women and that could have influenced the treatment effect. In part it remains unclear how ASB was determined, so that effects cannot be clearly allocated to a diagnostic procedure. In addition, in all studies information on the main characteristics of the study populations is missing, which makes the interpretation of results more difficult.

Furthermore, potential harm from the antibiotics commonly used in the 1960s was hardly investigated. As different antibiotics are currently used to treat ASB, the benefit-harm ratio could have shifted since then - either in favour of screening or in favour of a watchful waiting strategy. The question of whether pregnant women or their children benefit from screening is therefore just as unclear as the question of whether they benefit from antibiotic treatment of ASB detected by Screening.

## **Complications caused by ASB rarer than expected**

In the Netherlands screening for ASB is so far only recommended for high risk groups. This is why studies including unscreened control groups are possible. However, in a current comparative study there was a problem in the interim analysis: The events defined as study outcomes, pyelonephritis and preterm birth, occurred considerably less often than expected. In comparison with former times, this indicates a markedly decreased incidence of upper urinary tract infections. It is possible that nowadays pregnant women with ASB experience far fewer complications; this could have also shifted the ratio between the advantages and disadvantages of screening.

## **Clarification meaningful and feasible**

"The question as to how beneficial a general screening for ASB in [pregnant women](#) is should also be posed again in Germany", says Stefan Sauerland, Head of IQWiG's Non-Drug Intervention Department. "Such a study would be feasible and ethically justifiable if one excluded certain high-risk groups so that [antibiotic treatment](#) would not be withheld from them in the placebo arm.

However, the termination of recruitment in the Dutch study shows that the sample size must be planned on the basis of the current incidence of pyelonephritis, which is apparently lower than it was 40 or 50 years ago. It could then also be determined which screening strategy is shown to be the better choice; for instance, one-off [screening](#) by means of urine culture or several paper strip tests during the course of pregnancy. In addition, both the mother and the child should be monitored beyond birth to detect late complications."

## **Process of report production**

IQWiG published the preliminary results in the form of the preliminary

report in October 2014 and interested parties were invited to submit comments. At the end of the commenting procedure, the preliminary report was revised and sent as a [final report](#) to the commissioning agency in February 2015. The written comments submitted were published in a separate document at the same time as the final report. The report was produced in collaboration with external experts.

The (German-language) executive summary provides an overview of the background, procedure and further results of the final report. An English-language summary will soon be available.

**More information:** [www.iqwig.de/download/S13-02\\_A ... -bei-Schwangeren.pdf](http://www.iqwig.de/download/S13-02_A...-bei-Schwangeren.pdf)

Provided by Institute for Quality and Efficiency in Health Care

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